GENERAL INFORMATION FROM SERVICE CONVERSION FROM OVERHEAD TO UNDERGROUND

1. PRE-INSPECTION: Once the City provides notification to the property owners that the District is ready for private overhead to underground utility conversion, please contact the responsible Building Inspector, Paul Sobek, at (949) 644-3268 for a pre-inspection. A pre-inspection is required even if your property has existing underground services. The pre-inspection checklist will indicate whether further underground utility processes need to be taken.

If your property has existing electric, telephone, and cable underground services, no further action will be necessary after the pre-inspection. If one or more of the existing services need to be undergrounded, please note the following steps.

2. RETAIN AN APPROPRIATE CONTRACTOR: The contractor you retain must possess one of the following contractor's license to perform the private underground conversion work:

- C-10: Electrical Contractor (Specialty)
- A: Engineering Contractor
- B: General Building Contractor
- Owner/Builder

It is strongly recommended that you obtain at least 3 bids from contractors and ask for references in order to get a reputable contractor that will provide the highest quality of work at the lowest possible price. Please refer to the California Contractor's State License Board for further information on hiring a contractor.

3. DETERMINE METHOD OF CONNECTION AND PREPARE EXHIBIT: You and your contractor will need to prepare a line diagram (exhibit) of the work being proposed. The exhibit should show all boxes, conduit, conductor sizes, service rating, and breaker sizes. SCE requires that your contractor call the Local Service Planner to approve your meter location. The contractor will need to obtain a plan from SCE prior to any excavation. Please note that any existing, non-conforming services may need to be upgraded and/or relocated.

Please see attached exhibits for appropriate requirements to underground your electric, telephone, and/or cable services. All installations shall comply with the rules and regulations of the City of Newport Beach along with all applicable governing laws and ordinances, Southern California Edison, AT&T, and Time Warner Cable.

SPECIAL SCE PROVISIONS:

Should your electrical panel be an older style without a conduit knockout, best practices would be to replace your panel (as referenced above). Should this not be feasible, SCE has other approved options that are listed below, and detailed in SCE's Electrical Service Requirements, page 3-32 (enclosed):

- Keep existing service and connect underground conduit from point of connection and sweep inside of exterior wall into service side of panel (Example A – ESR-3); or
- Install new meter and distribution fuse meter for underground service (Example B – ESR-3); or
- Install meter adapter onto the exterior of existing service (connect at meter socket – Example C – ESR-3) (This method is strongly discouraged); or
- Keep existing service and connect surface mounted pull box and conduits/weatherproof enclosed gutter (connect on service mast of room, Example D – ESR-3).

4. OBTAIN ELECTRICAL PERMIT: Once the exhibit from Step 3 has been prepared, your contractor should go to the City's Building Department to obtain an Electrical Permit. Please have your contractor bring the pre-inspection checklist with him/her.

If you have any questions regarding the Electrical Permit, please contact the City's Building Department at (949) 644-3275.

5. CONDUIT EXTENSION: The contractor shall extend an approved plastic conduit (minimum PVC Schedule 40) for each of the overhead services to be undergrounded.

UNDERGROUND CONDUIT SIZES:

Electrical:	One three-inch (3") conduit (residential applications only)
Telephone:	One two-inch (2") conduit
Cable:	One one-inch (1") conduit

Please refer to the attached exhibits from each utility company for specific information regarding the installation.

SPECIAL SCE PROVISIONS:

- Provide a minimum three-foot (3') clearance in front and side-to-side of meter location.
- Meter height must meet 4'-0" to 6'-3" from final grade to centerline of meter.
- Provide 36-inch sweeps.

- Conduits to be placed a minimum of 30 inches below finished grade measured from the outside of the conduit.
- Provide a 12-inch separation between other utilities, 6 inches for crossings.
- Install a yellow ¼-inch pole pull rope in the conduit for mandrelling.

6. CALL FOR INSPECTION: An inspection approval shall be obtained from the City's Building Department and SCE Inspector for the conduit installation PRIOR to backfilling the trench. Please provide a minimum 48 hour notice for inspections.

Paul Sobek, City Building Inspector, at (949) 644-3268.
Steve Love, SCE Inspector, at (714) 895-0426

7. METER PANEL UPGRADE AND BACKFILLING: All meter panel installations shall comply with the rules and regulations of the City of Newport Beach along with all applicable governing laws and ordinances and the Electrical Services Requirements of Southern California Edison.

All backfilling shall comply with City Building Department requirements, and Public Works Department requirements, if applicable.

8. CALL FOR "ROUGH SERVICE RELEASE" INSPECTION: Once the work described in Step 7, the contractor shall call Paul Sobek, City Building Inspector at (949) 644-3268, for a "rough service release" inspection. A "rough service release" must be approved prior to contacting SCE to arrange for a "cut-over".

Once Step 7 has been completed, the owner/contractor shall await for further notice from the City to schedule a "cut-over" as described in Step 8.

8. SCHEDULE CUT-OVER: Once 90 percent of the District receives the appropriate City and SCE "releases," SCE will begin contacting contractors to schedule a "cut-over" to the new panel. The contractor must be present at the scheduled "cut-over" time. All overhead wires will be removed and the overhead riser mast will be cut and capped under. This step is to complete the actual work to convert overhead services to underground services.

9: SCHEDULE A FINAL INSPECTION: A final City inspection shall be made to ensure that all work is complete. All repaving shall be completed. The Electrical Permit will not be "finaled" until this step has been taken.

If any questions arise concerning these requirements, please contact the City's Building Department at (949) 644-3275 or your SCE Local Service Planning Office at (714) 895-0217.

General Notes/Specifications per National Electrical Code and Utility Standards:

Dig Alert – The State of California Government Code 4216 mandates that anyone doing excavation work shall call at least two working days prior to commencement of any excavation. Please call (800) 227-2600

Newport Beach Municipal Code

1. Exposed PVC conduit shall be a minimum of schedule 80. Nonmetallic conduit installed on the exterior in runs greater than twenty-five feet (25') require expansion fittings per NEC 300-5 & 347-9.
2. Grounding electrode and water bonding to be checked and upgrades if necessary sized per NEC T-250-94 & T-250-95.
3. All conduits, fittings and boxes sized per wire capacity of NEC-370-16 (Appendix C).
4. Maintain proper clearance for working spaces at new services and pull boxes. Minimum width of 36" x 36" depth x 78" in height per NEC 110-16.
5. Service equipment exposed to the weather shall be rain-tight NEC 370-15.
6. For each and every meter, the contractor shall furnish and install a switch, or other approved disconnecting means with over-current protection. (NEC allows up to a maximum of six (6) switches or disconnects to constitute the main over-current device) NEC 230-42; 230-71; 230-79.
7. If existing sub-panel(s) remain down line of new service disconnects, protection of existing may need to be supplied with a new additional panel giving protection the same as that of the old system. NEC 230-42; 310-15.
8. All meter fittings shall be mounted on a substantial support in a true vertical position. NEC 110-12.
9. All equipment, devices, and components shall be listed (recognized testing laboratory). NEC 100.

Additional Southern California Edison Requirements: ESR-3 Installation Guidelines

1. Underground service conduit to be minimum 3"/may be reduced to 2 ½" for existing 100 amp services. (SCE EUSERC Drawing No. 344)
2. Pull boxes minimum size: 8" x 16" x 24" with a means of sealing consisting of two drilled stud and wing nut assemblies on opposite sides of cover. (SCE ESUSERC Drawing No. 344)
3. Where a self-contained "A" base meter is in place, and the meter is relocated on the same building or an increase in load requires the installation of larger service conductors or a larger raceway, a new meter panel or switchboard shall be installed.
4. Maintain required meter clearances and working spaces (Figure 5-4 WORKSPACE, ESR 5-17).

AT&T Service Undergrounding Procedures

When all conduits and underground structure are in place, each property will have a two-inch (2") telephone service conduit capped off at the property line. It is the individual property owner's (or contractor's) responsibility to extend this service conduit to the existing telephone connection box. The connection box, also known as a standard network interface (SNI), is mounted to the inside wiring. It may be located in the eaves, the attic, or on the side of the house.

AT&T conduit and trenching requirements are provided in Attachment #1. These requirements, for your information and use by your contractor, show the method to bring your two-inch (2') conduit to the connection box / SNI plus a typical trench cross-section.

The work provided by AT&T at the time of the undergrounding will be limited to the following:

1. The pulling of new lines through the conduit to the EXISTING connection box / SNI location. For those properties where the conduit does not run to the existing connection box / SNI location – the wiring will be run exposed along the outside wall to make the connection.
2. Replacement of an existing old connection boxes with a new SNI where appropriate.
3. Conversion of all working telephone lines to underground and removal of aerial drop wires back to the pole from the house.

Due to tariff and specific billing requirements, connection box relocations and inside wiring work cannot be provided by this undergrounding district. By law, a service order MUST be placed with AT&T to relocate the existing connection box, if so desired. Those property owners that wish to relocate the connection box(es) to the end of their conduit should refer to Attachment #3.

Terminal cabinets to house connections box(es) SNI's are not required by AT&T at the time of the undergrounding with the exception of new residential construction.

The SNI unit is a gray, boxlike unit that can be mounted directly to the structure. For those property owners that wish to have the SNI enclosed in a cabinet, Attachment #2 provides the minimum specifications that we must have to utilize such cabinets.

AT&T – ATTACHMENT #1

UTILITY CONDUIT / TRENCHING REQUIREMENTS

Conduits placed in the same trench with power (SCE) must be separated by not less than 12" of well compacted soil or 3" of concrete and have not less than 18" of cover measured from gutter flow-line.

Approved plastic electrical conduit – P.V.C. Schedule 40 – (Plumbing pipe and fittings must not be used).

All conduit bends shall have a minimum radius in feet equal to the conduit diameter in inches. (2" diameter = 24" radius, 3" diameter = 36" radius etc.) All segments must be long radius segments.

No conduit run shall have over two 90 degree bends. If it is necessary to have over two 90 degree bends, insert an accessible pull box in the run of conduit.

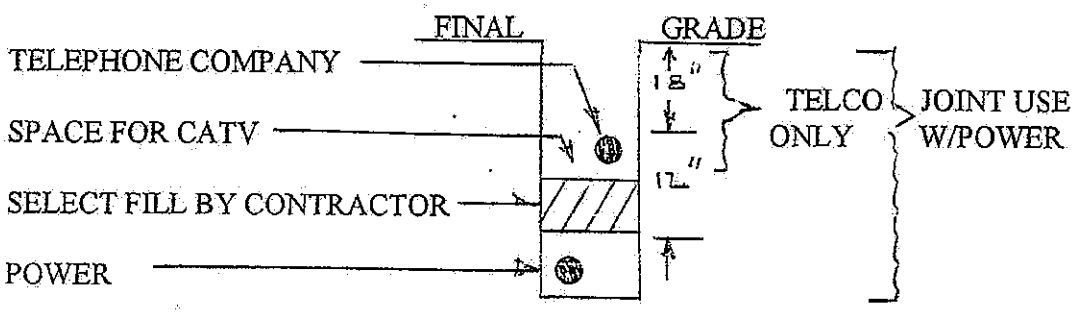
All conduits shall be left clean, dry and free of debris or other obstructions. A pull line of 3/8" polypropylene must be tied securely to AT&T pull line.

AT&T reserves the right to refuse to use conduit that has deviated from plans and specifications.

Underground Conduit Sizes:
- Phone conduit – 2"
- Cable TV – 1"
- SCE – 3" (for residential installations, 400 amps or less)

Below is an illustration of a typical cross-section showing all possible utilities that may share a joint trench.

TYPICAL TRENCH DETAIL



Updated 4/25/07

AT&T – ATTACHMENT #2

TELEPHONE TERMINAL HOUSING REQUIREMENTS

AT&T does NOT require the use of cabinets to house connection boxes or SNI units unless new construction is involved.

Minimum size cabinets to be placed is 11"x14" (will house one to six lines).

Depth of cabinet will never be less than 4" from the backboard to the front surface.

Cabinet to be provided with:

1. ¾" plywood backboard
2. #6 ground capabilities

Gauge of steel required:

1. 20 gauge steel up to 14"w x 16"h
2. 16 gauge steel from 14"w x 18"h up to 32"w x 36"h
3. 14 gauge steel for all cabinets 34"w x 36"h and larger

Must be UL approved.

For security and aesthetic appearance the conduit can be run up to the cabinet.

Suppliers of approved cabinets can be found through electricians, their suppliers, or in the AT&T Yellow Pages under the listing of Telecommunications.

AT&T reserves the right to refuse to install service into those cabinets that do not meet the above specifications in accordance with the National Electrical Codes.

Updated 4/25/07

AT&T – ATTACHMENT #3

PHONE UTILITY CONNECTION BOX RELOCATION

During the under grounding of utilities it may not always be feasible to provide a trench and conduit to the existing connection box.

For those property owners that place conduit to a location other than the existing connection box and do not wish to have exposed wiring showing – a service order must be placed with AT&T to relocate the connection box.

The property owner must also provide a ground or access point to the Edison Company's ground.

Those orders placed for relocation should be ordered and worked prior to the anticipated underground start date.

It is important for you to know that inside wire work will be required at the time of a connection box relocation. This inside wiring work can be provided by AT&T on the same service order at the time of relocation.

Inside wire work can also be performed by others – including electricians, yourself or other telephone service providers. These providers can be found in the AT&T Yellow Pages under Telecommunications. In this case, customer coordination would be required to assure that connection box relocation and inside wiring be done at the same time to avoid disruption in telephone service.

Should you require information on relocation or inside wiring charges or wish to place a service order, please call our Residence Customer Service at 1-800-288-2020 or for business call our Business Customer Service at 1-800-750-2355.

Updated 4/25/07

UNDERGROUND UTILITY ASSESSMENT DISTRICT No. __

Private Conversion Checklist for Owner/Contractor

_____ Wait for conversion letter from the City of Newport Beach to start work. (owner)

_____ Schedule a pre-inspection with the designated City Building Inspector. A pre-inspection checklist will be provided upon completion. (owner)

_____ Retain an electrical contactor to perform underground utilities work. (owner)

_____ Contractor to obtain conduit map from SCE Local Service Planner prior to trenching and conduit installation.

_____ Apply and obtain approval for an electrical permit at City Building Department. The completed pre-inspection list must be presented. Should any portion of the work take place in the public right-of-way, an approved encroachment permit from the City Public Works Department must be obtained prior to starting work. (contractor)

_____ Contractor to start work by opening trench, installing conduits, and upgrading the meter panel, as necessary.

_____ Schedule a 2nd inspection with City Building Inspector to review trench, proximity of footing, conduits, and anything that is deemed necessary by the Building Inspector. This should be performed prior to closing the trench (contractor)

_____ Schedule a SCE "release inspection" with designated SCE inspector to inspect trench, conduit material, pull rope, and all other designated SCE items. This inspection shall be completed prior to closing the trench. (contractor)

_____ Schedule a "rough service release inspection" with City Building Inspector to inspect installed meter panel and grounding. This inspection shall be scheduled after the trench is backfilled and repaved. (contractor)

_____ Wait for letter from City indicating SCE is ready to schedule a cut-over. A "rough service release" approval must be obtained prior to scheduling a cut-over. (owner)

_____ SCE will contact contractor to schedule a cut-over once 90 percent of the district has received City and SCE "releases". The contractor will need to meet with the SCE representative at the project site. (contractor)

_____ Schedule a final inspection with City Building Inspector once all work is completed (contractor).

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Figure 5–18: Combination Meter and Service Section for Overhead Dwelling Service

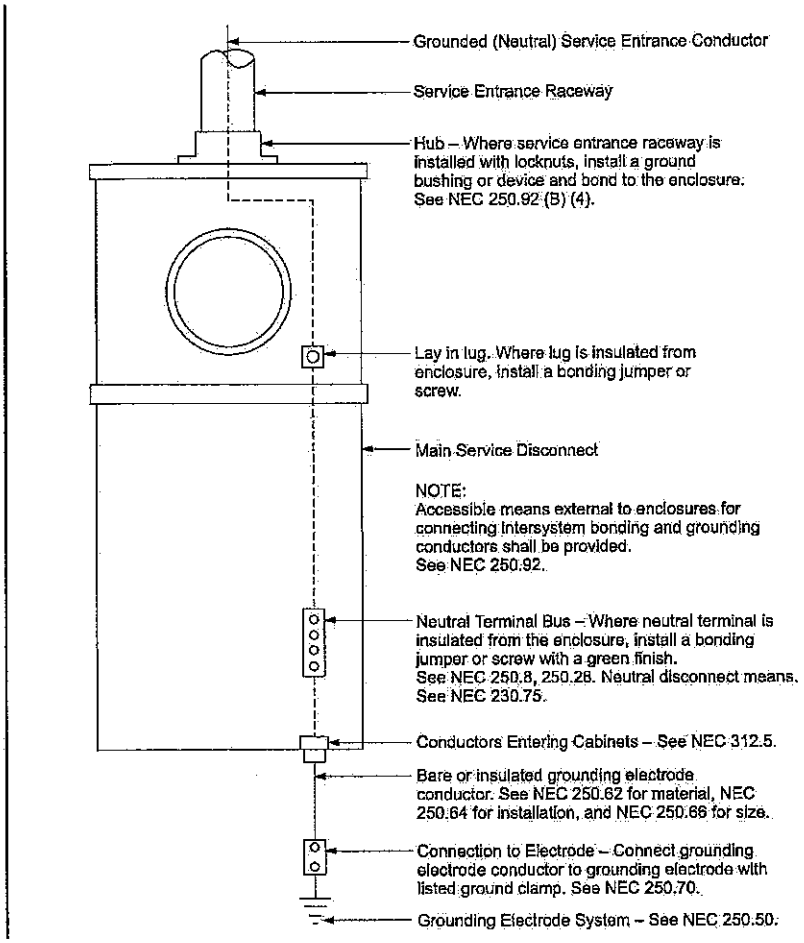

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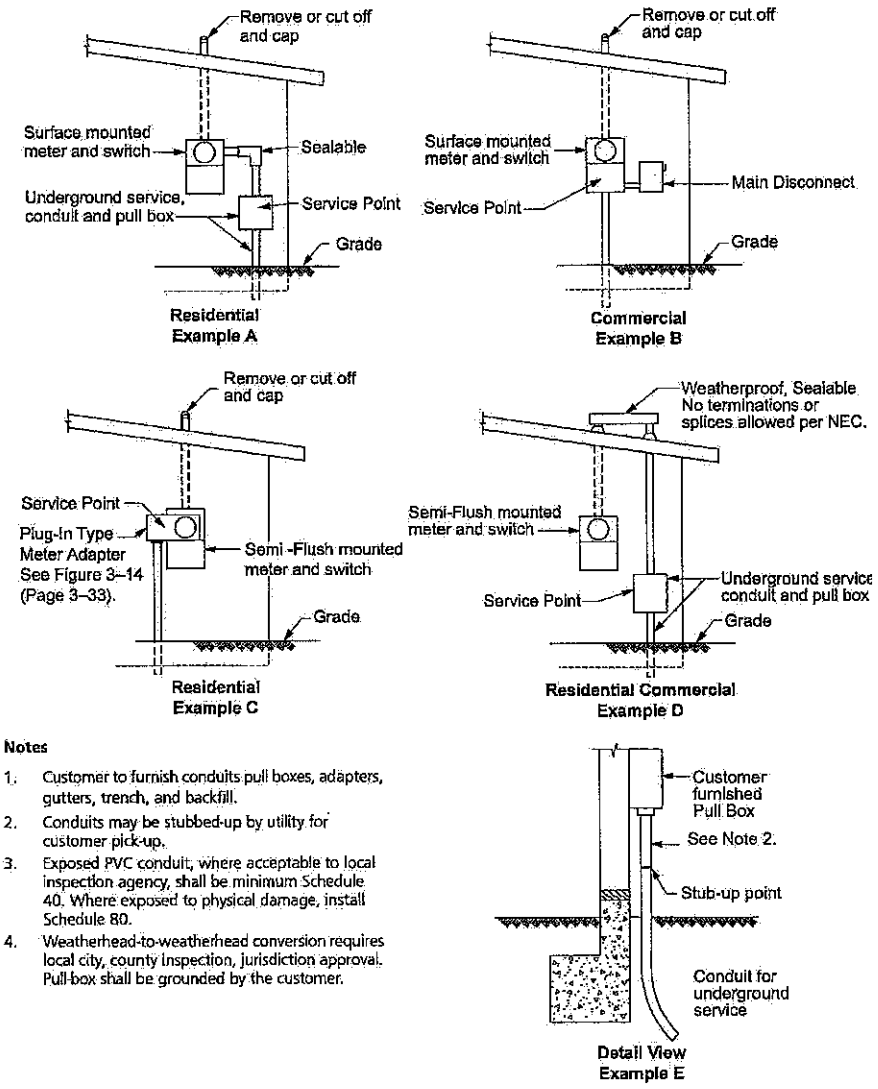
Figure 3–13: Typical Service Conversion from Overhead to Underground



Notes

1. Customer to furnish conduits pull boxes, adapters, gutters, trench, and backfill.
2. Conduits may be stubbed-up by utility for customer pick-up.
3. Exposed PVC conduit, where acceptable to local inspection agency, shall be minimum Schedule 40. Where exposed to physical damage, install Schedule 80.
4. Weatherhead-to-weatherhead conversion requires local city, county inspection, jurisdiction approval. Pull-box shall be grounded by the customer.

Detail View
Example E

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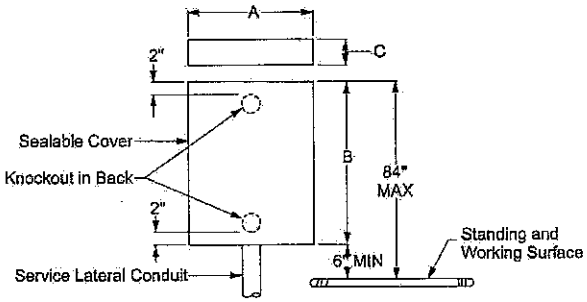
Figure 3–11: Underground Pull Boxes

EUSER DRAWING NO. 344



Pull Box Dimensions

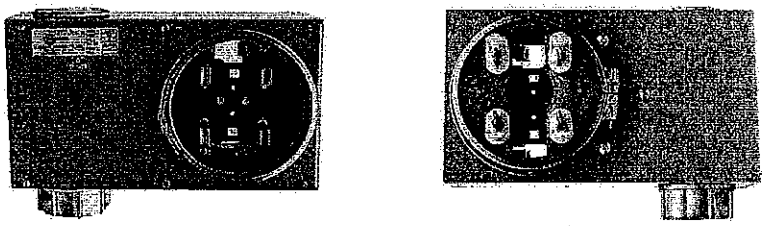
Service Conduit Size	A	B	C
2"(a)	10" 8"	12" 18"	4" 4"
2-1/2"(a)	12" 8"	16" 18"	6" 6"
3"	16"	24"	8"

(a) Normally not used for conventional conduit systems. Consult local Service Planning Office.

Notes

1. The service conduit may enter the end or the back within two inches of the end of the pull box but shall not enter the side.
2. When a service conduit enters the end of a pull box, the opposite end shall not be less than 24 inches from any side wall, ceiling, or other obstruction. Any projection which extends more than the depth of the box from the surface on which the box is mounted shall be considered an obstruction.
3. No conductors other than service conductors shall be installed in any pull box.
4. Provide two lifting handles on pull box covers of four-square feet or more in area; covers not to exceed nine-square feet.
5. Pull box covers shall be provided with a means of sealing consisting of two drilled stud and wing nut assemblies on opposite sides of the cover. All securing screws shall be captive.
6. Consult the local Service Planning Office for conduit requirements.
7. See to Figure 3–9 (Page 3–28) for larger pull boxes equipped with termination facilities.

Figure 3–14: Typical Plug-In Type Meter Adapter

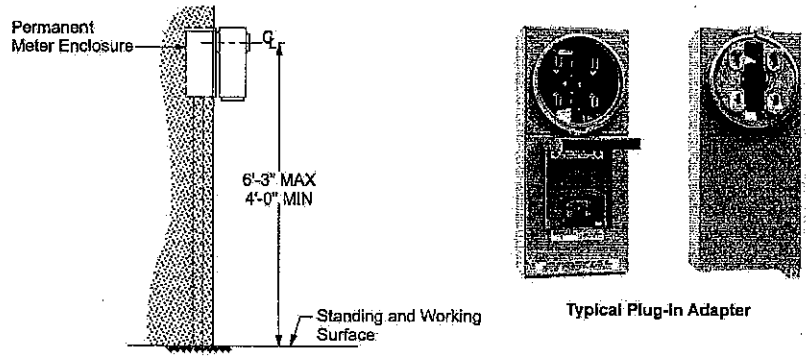


Front View | Rear View

Note

1. The plug-in type meter adapter is limited to 120/240 V, 125 A single-phase service only. The maximum cable size to pull and terminate into the adapter is 1/0 CLP due to limited working clearance in the terminating section.

Figure 3–15: Plug–In Temporary (Piggyback) Service Adapter



Typical Plug-In Adapter

Note

1. Permanent service cables must be installed and approved by the local inspection jurisdiction before a temporary (Piggyback) service adapter may be installed.

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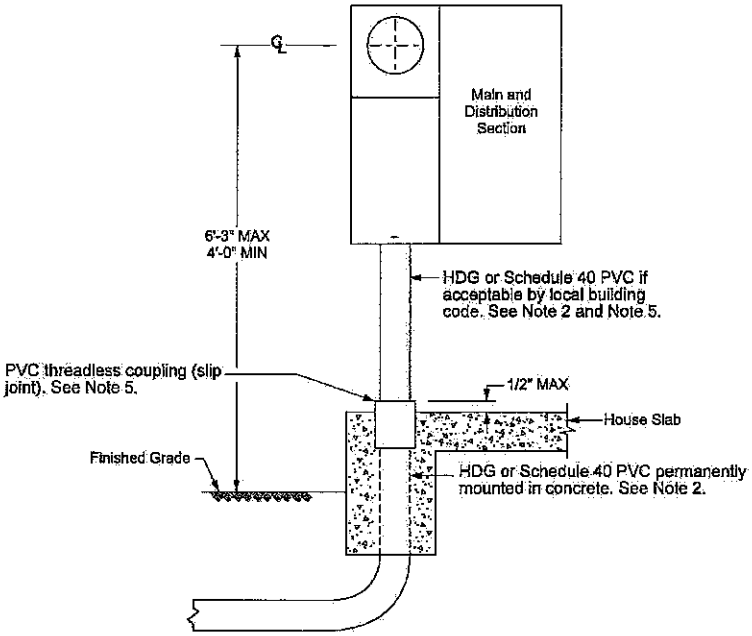
Figure 3–19: Service Entrance for Single-Family Dwelling Service



Notes

1. Customer's service conduit installation is subject to the approval of the local inspection agency. Backfill and compaction shall comply with all local ordinances.
2. Consult the local Service Planning Office to determine minimum Rigid Conduit to be installed.
   a. The minimum conduit size is 2-1/2 inches for (100) A service.
   b. Two hundred (200) ampere services requires a minimum conduit size of three inches.
3. A multiple meter service may require larger conduit than specified in Note 2, consult the local Service Planning Office for details.
4. The conduit may be HDG, or where approved by the local inspection agency, minimum Schedule 40 PVC. See Figure 3–20 (Page 3–38) for exposed conduit.
5. The conduit may be installed in one piece without a coupling or in two pieces with a threadless coupling permanently mounted in the foundation as illustrated in Figure 3–19 (Page 3–37).

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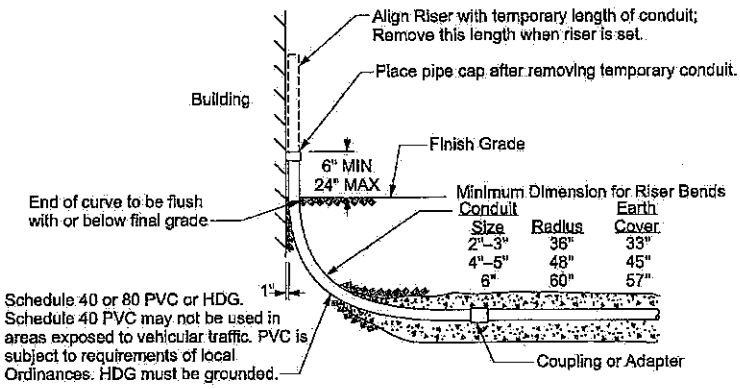
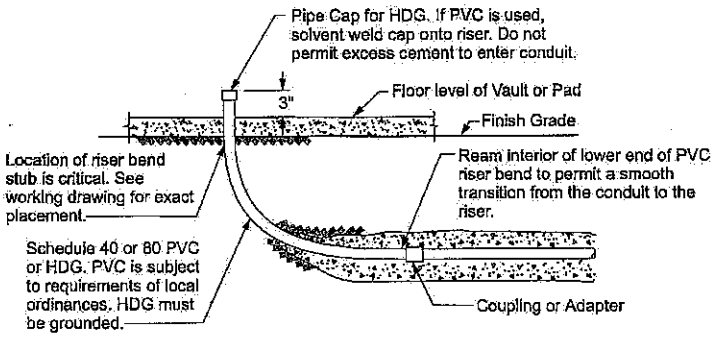
Figure 3–21: Riser Bend Installation at Wall or Pad



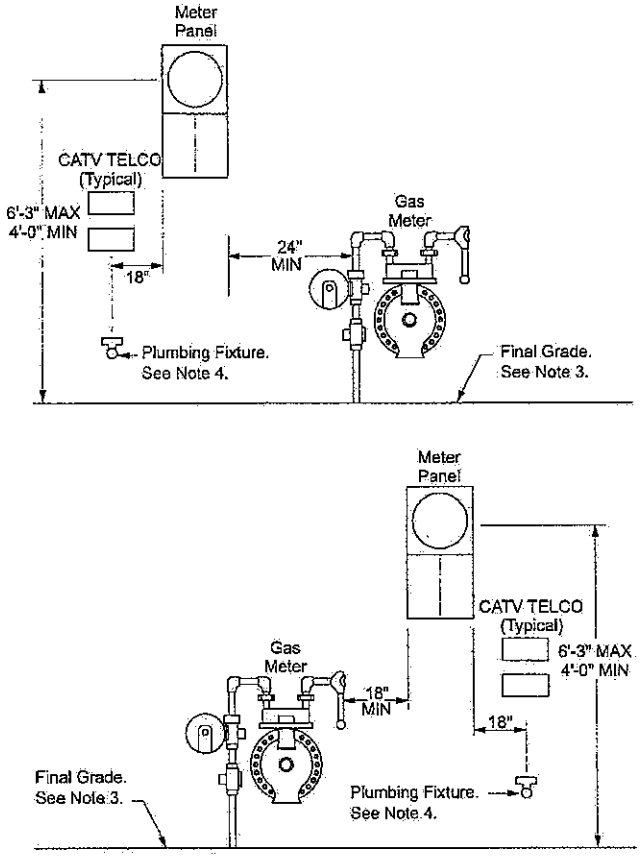
Typical Riser at Building



Typical Riser at Vault or PAD

Plan-View For Two Conduit Terminals

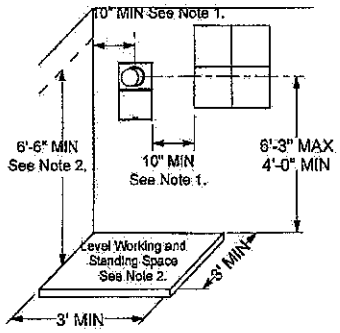
Figure 5–4: Separation of Meter Assemblies for Electric and Gas Services



Notes:

1. Size and dimensions of panels will vary. Drawings are not to scale.
2. This drawing pertains to both overhead and underground electric service applications.
3. Maintain a three-foot clear, level, and unobstructed work space in front of electric service equipment.
4. Plumbing fixtures that extend more than six (6) inches out from wall surface must be located 18-inches minimum from the outside edge of the meter panel.

Figure 5–5: Workspace — Surface-Mounted or Semi-Flush Meter Installation

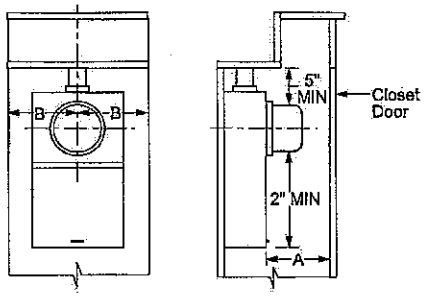


Surface - Mounted or
Semi-Flush Meter Installation

Notes

1. The horizontal clearance from the centerline of the meter to the nearest side wall or other obstruction shall be 10-inches minimum. A horizontal clearance from the edge of the meter panel to the edge of a window or doorway (including sliding glass doors) shall be 10-inches minimum. A gas meter or plumbing fixture that does not protrude more than six (6) inches out from the wall, or extend less than 18 inches horizontally from the outside edge of the meter panel, shall not be considered an obstruction. See Figure 5–4 (Page 5–23).
2. A level working and standing surface, clear and unobstructed, entirely on the property of the customer, shall be provided. The minimum width of the workspace shall be 36 inches overall, but need not be centered beneath the meter. The minimum depth of the workspace shall be 36 inches. Where meters are enclosed in a closet or recessed in an enclosure, the depth of the workspace is measured from the outer face of the closet or recess. The minimum height of the workspace shall be 78 inches.

Figure 5–6: Minimum Enclosed Meter Clearances — 0–600 Volts



Minimum Enclosed Meter Clearances

	A	B
Residential	7"	10"
Commercial	11"	10"